

USER and INSTALLATION MANUAL

(Revision 5/13)

BR1, BR2, BR3 systems

Wireless Chain-Rode Counter with Windlass and Thruster Remote Control for Vessels



Function descriptions:

The wireless chain counter system consists of:

- Wireless handheld unit Remote Standard (LX = Standard + stern thruster buttons)
- Base unit:
 - BR1_Base (chain counter, windlass control)
 - BR2_Base (chain counter, windlass, bow thruster, deck lights, pump)
 - BR3_Base (chain counter, windlass, bow & stern thruster, deck lights, pump)
- Windlass sensor and magnet
 - BRS* (**B**oat **R**emote wireless windlass **S**ensor) module for quick and easy installation

BR system can support up to 4 wireless handheld remote controls.

For purchase of additional Handheld Remote Control contact your supplier.



List of Material:

BR1 system: - BR_Remote unit
- BR1_Base unit

BR2 system: - BR_Remote unit
- BR2_Base unit
*Option - BRS wireless windlass Sensor

BR3 system: - BR3_Remote unit
- BR3_Base unit
- BRS wireless windlass Sensor

BR1, BR2, BR3 system:

- Satin blue lanyard
- Magnet cylinder for windlass gypsy, diameter 8mm, height 5mm
- Reed switch (sensor) for windlass - universal
- 3xAAA Batteries (1,5V x 3 pcs)
- Screws for fixing Base unit 2 pcs
- User Manual (English), available also at www.boat-remote.com

* Available with BR2_Base as an option (order separately)

SAFETY NOTICES:***Product installation and Operation***

- This product (BR1, BR2 and BR3 system) must be installed and operated in accordance with the instructions provided. Failure to do so could result in personal injury, death, damage to your vessel and/or poor product performance.

Warning: Ensure safe operation

- Only skilled adult person with experience and knowledge for safe operation of anchor windlass and boat thrusters may use this product!

- Improper use of equipment can be dangerous and can lead to life threatening situations
- ALWAYS CHECK BEFORE you operate the BR handheld if it is safe, there is nobody in proximity and that use of windlass or thruster is not potentially dangerous to anybody around.
- It is the user's responsibility for safe use.
- Installation must be carried out by a certified electrician.

DISCLAIMER

- Manufacturer is not responsible for damages or injuries caused by improper use or inability to use the product.
- The use of the BR1, BR2 or BR3 system is permitted only on owners or captain's own risk, regardless of situation, cause or consequences.
- If you do not agree or your jurisdictions do not allow the exclusion of incidental or consequential damages, then you must return product within 8 days to sales point in original packaging and unused to get money back.

Water ingress disclaimer

Although the waterproof rating of BR Handheld and BR1_Base unit exceeds IP65 standard, water intrusion and subsequent equipment failure may occur if any equipment is subjected to running water, high pressure washing or submersing in water. Manufacturer will not warrant equipment subjected to those exposures.

Caution: Cleaning

When cleaning this product:

- Do NOT wipe the display screen with a dry cloth or paper as this could scratch the screen.
- Do NOT use abrasive, acid or ammonia based products.
- Do NOT use pressure or jet wash.

Caution: Direct sun light

To protect your product against the damaging effects of ultraviolet light and to extend lifetime keep BR handheld in shadow and dry place.

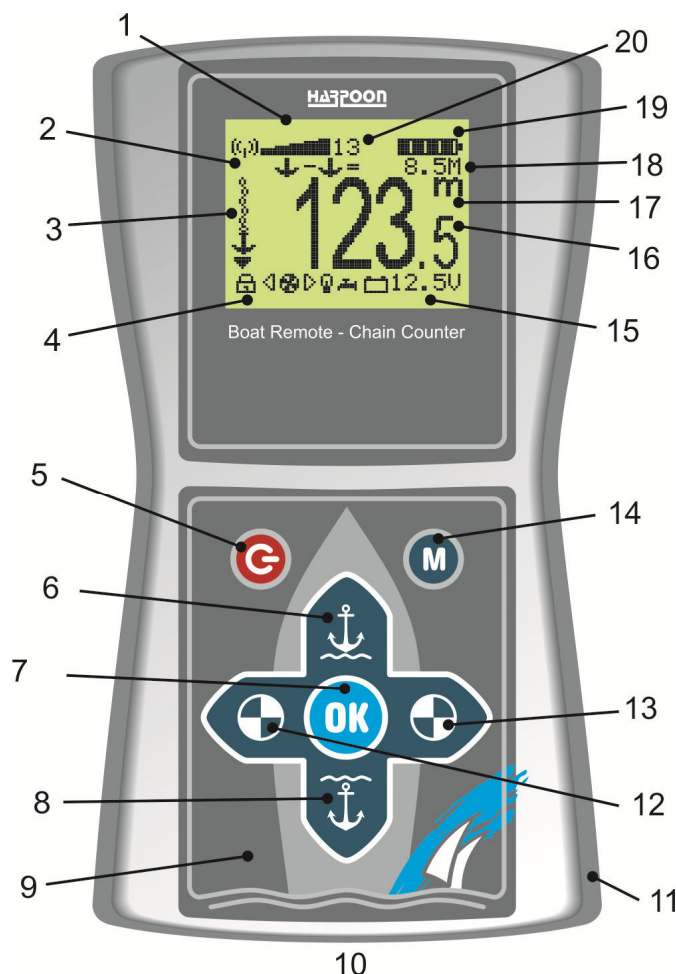
Caution: Power supply protection

When installing this product ensure the power source is adequately protected by means of a suitably rated fuse or automatic circuit breaker.

Product disposal

Dispose of this product in accordance with the WEEE Directive. The Waste Electrical and Electronic Equipment (WEEE) Directive requires the recycling of waste electrical and electronic equipment. Whilst the WEEE Directive does not apply to some BR products, we support its policy and ask you to be aware of how to dispose of this product properly.

Features of BR handheld remote unit



1. Graphic LCD display, LED backlight, direct sunlight viewable
2. Signal strength indicator
3. Animated symbols
4. Status
5. ON/OFF and Emergency
6. Anchor UP
7. AUX functions and Confirmation
8. Anchor DOWN
9. Embossed illuminated keys
10. ABS enclosure with sealed battery compartment
11. Anti skid rubber protection
12. Left (and Bow thruster with BR2 system)
13. Right (and Bow thruster with BR2 system)
14. Menu and Quick reset (hold 3sec)
15. Windlass accu voltage
16. Chain length
17. Units (m, ft, rev.)
18. Tandem anchor distance and reports
19. Battery indicator
20. Channel (2-13)

BR Handheld Remote control

BR3 Handheld includes Stern thruster buttons (BR3_System only)



ON/OFF

- Hold to power ON (double short beep).
- To power OFF press momentarily (long single beep).
- After power up caution message appears on LCD. **BEFORE YOU CONFIRM, CHECK** if you can operate BR safely! Confirm safety caution message by pressing OK to proceed.
- If after power up, message "Keypad error ! Release button x" appears, release button and proceed. If button was not pressed at all and error occurs, you **MUST** send Handheld Remote Control on repair to change Keypad. Safety function will prevent user to enter operation mode.
- If you suspect that anything is not operating normally, power OFF unit by pressing OFF button momentarily and check for malfunctions.
- BR remote will switch off automatically after 10 minutes when the windlass is not in use.
- In case of more handheld units in system, the closest have priority to control (one at time)

IMPORTANT SAFETY INFORMATION:

- **For EMERGENCY STOP during operation, press ON/OFF momentarily and all output relays in Base unit will be disengaged immediately.**
- **If keypad error occurs and no button was pressed you MUST switch OFF Handheld Remote Unit, remove batteries and send it to repair.**

**MENU,**

- Press to enter menu.
- Hold 3 seconds for quick counter reset to 0.0

**LIFT the ANCHOR (UP)**

Windlass will lift anchor as long as you press »UP«. Chain counter will decrement chain – rode length.

IMPORTANT:

- When »UP LIMIT« is reached, windlass will stop even if you keep pressing »UP«. To continue, release »UP« button and carefully lift remaining distance to dock the anchor. By default this limit is set to 1m before anchor park position.
- Limit can be set in Menu > Settings > Up Limit.

**LOWER the ANCHOR (DOWN)**

Windlass will lower the anchor as long as you press »DOWN«. Chain counter will increment chain – rode length.

IMPORTANT:

- When »DOWN LIMIT« is reached, windlass will stop even if you keep pressing »DOWN«. To continue, release »DOWN« button and lower remaining length of chain – rode. By default this limit is set to 30 m.
- Limit can be set in Menu > Settings > Down Limit.

**BOW THRUSTER, left <> right (BR2_Base and BR3_Base)**

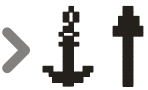
Press momentarily for lateral movement of vessel.

IMPORTANT:

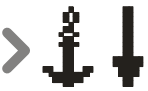
- To gain control of bow thruster by BR you must enable Bow Thruster on original control panel first!
- For safety operation of Bow Thruster see manufacturer's manuals

**QUICK FUNCTIONS**

Press »OK« to enter quick function selection. See LCD for functions. Select quick function by pressing a corresponding button (up, down, left, right). Press »OK« for EXIT without selection or wait until counter in lower right corner on LCD counts down to 0.0.

**AUTO UP/DOWN**

Select quick functions by pressing »OK« and press »UP« for automatic lifting of the anchor or press »DOWN« for automatic descent of the anchor. Windlass will operate without holding the button! AUTO function is active when LOCK symbol is present on LCD. (Shown right)

**IMPORTANT:**

- Press any button to cancel AUTO UP/DOWN function and stop windlass!
- Keep remote unit in hand with thumb ready to momentarily press any button.
- AUTO function will end when »UP LIMIT« or »DOWN LIMIT« is reached.



LIGHT ON/OFF (available with BR2_Base and BR3_Base)

Select quick functions by pressing »OK« and press BULB SYMBOL.
Highlighted symbol means »Light ON«. Repeat to switch the light OFF.
During normal operation in bottom row the bulb symbol is indicating »Light ON«.



WATER PUMP (available with BR2_Base and BR3_Base only)

Select quick functions by pressing »OK« and press WATER TAP symbol.
Highlighted symbol means »Pump ON«. Repeat to switch the pump OFF.
During normal operation in bottom row symbol the water tap symbol is indicating »Pump ON«.

IMPORTANT:

- When handheld unit is switched OFF, Light and Water pump output will automatically switch OFF too.

SETUP – handheld unit



Press »M« (Menu) to enter menu mode.

Use arrow keys (up, down, left, right) to select.

Press »OK« to confirm and save.

Use »M« or »Back« symbol to cancel and exit without saving.



MENU: Structure

- RESET COUNTER:

--YES/NO (Yes – sets counter to 0.0)

(Quick counter reset - press »M« for 3 seconds during normal operation.)

- **TANDEM ANCHOR:** (not available in common model) Confirm with »OK« when attaching second, tandem anchor.

Tandem distance (between anchors) of 8.5m
(example right) is displayed.



Counter continues to count distance to second anchor from 0.0. When you lift main anchor and counter reaches 0.0, counter automatically switches to tandem anchor distance value. You simply continue to lift the remaining chain and the tandem anchor.

- SETUP:

-- **UP LIMIT** (default set to 1.5 m)

-- **DOWN LIMIT** (default set to 30 m)

-- CALIBRATION:

---- NUMBER OF MAGNETS (pulses per turn, default 1)

---- CHAIN PER TURN (default 330 mm)

---- UNITS: See arrow for currently selected.

----- METRES (m) (default)

----- FEET (ft)

----- REVOLUTIONS (R)

-- BACKLIGHT:

- AUTO (1-5min) Auto OFF after no activity (default 5min)
- OFF Always OFF
- ON Always ON

-- **LOG IN BASE:** To enter (pair) new handheld remote unit to base you need to enable »ADD new remote to base« on base FIRST! See SETUP-base.

While LEDs (on base) are blinking, confirm »LOGIN« on handheld remote unit.

See report on LCD:

LOGIN SUCCESS. Press »M« to exit from Menu.

LOGIN FAILED - can be caused by communication interferences, bad batteries in handheld, full or bad memory, damaged unit(s)

- **CHANGE CHANNEL:** Available channels 2-13

-- Select channel and confirm with »OK« or exit without saving with »M«.

IMPORTANT

- BASE has to be in close range when logging.
- Channel selection is not possible when signal is not strong enough
- high interference signal on same channel
- Channel selection is only possible with remote unit logged to base.

- **LANGUAGE:**

- ENGLISH
- FRENCH
- GERMAN
- SPANISH
- ITALIAN
- SLOVENIAN
- TURKISH

Calibration of chain/rode counter

Sensor on windlass is detecting revolutions of windlass gypsy. Length of chain/rode deployed (winched) per revolution has to be adjusted to achieve accurate chain counter reading.

First you need to set up number of pulses per gypsy revolution.

Select MENU > SETUP > CALIBRATION >:

- NUMBER OF MAGNETS (pulses per turn, default set to 1)

Set number of pulses per one turn of windlass gypsy. One pulse per revolution is standard for majority of windlasses on market.

- CHAIN PER TURN (default METRIC-330 mm, IMPERIAL-12.9'')

Calculate value of »CHAIN PER TURN«:

You need to calculate chain length per one turn and enter value in »CHAIN PER TURN«.

A. Mark gypsy with duct tape and count revolutions while lowering or lifting anchor with BR handheld or anchor windlass switch.

You can count revolutions also with BR handheld.

Select: MENU > SETUP > UNITS > REVOLUTIONS > Exit from menu.

B. Set chain on starting position and reset counter by pressing »M« for 3 seconds. If chain is skipping on the gypsy when anchor is lowering then rather count number of turns while lifting.

C. Lower or lift anchor chain/rode

D. Calculate value of »chain per turn«:

Example 1: On chain length of 10 m 31 revolutions are counted.

Calculation: $10\text{m}/31\text{rev} = 10.000\text{mm}/31\text{rev} = 322,5\text{mm}$ > enter: 323mm

Example 2: At lifting full 50m of chain 154 revolutions are counted.

Calculation: $50\text{m}/154\text{rev} = 50.000\text{mm}/154\text{rev} = 324,6\text{mm}$ > enter: 325mm

E. Enter calculated value in:

MENU > CALIBRATION > CHAIN PER TURN – enter value (in mm)

F. Select desired units. For »meters« select (default setting) :

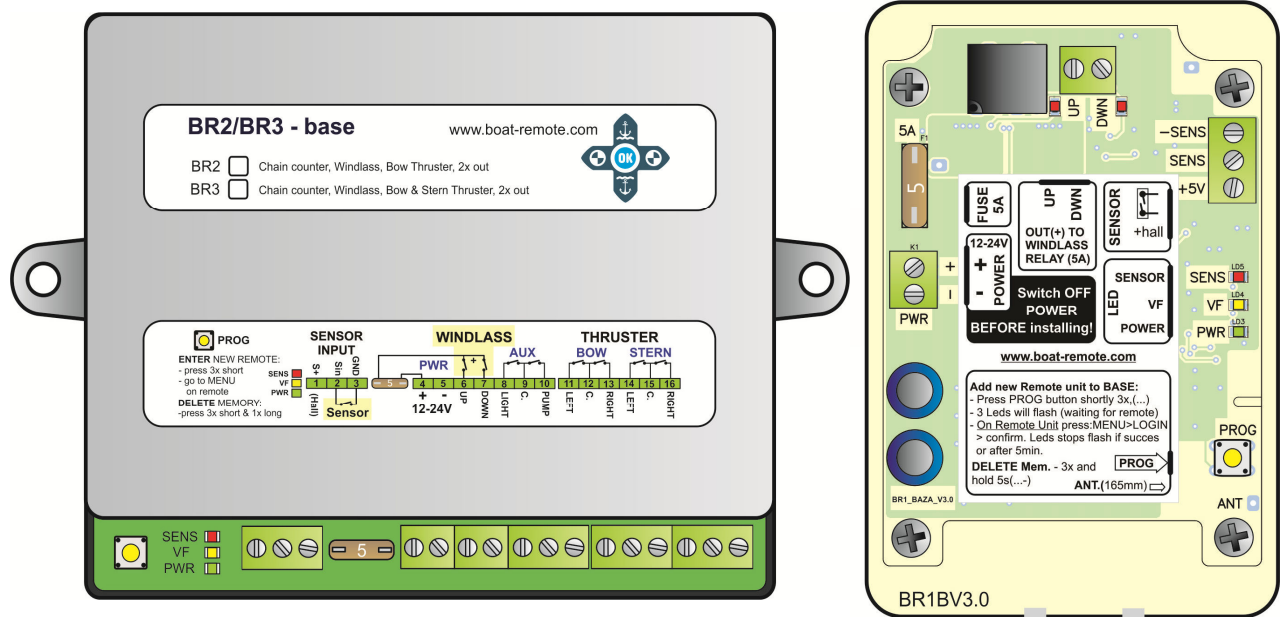
MENU > SETUP > CALIBRATION > UNITS > METRES > OK and Exit from menu.

IMPORTANT:

Chain should run smooth and without skipping. If not, counter can't be accurate and automatic stop safety function will not stop at the same chain length every time.

BR1, BR2, BR3 Base Setup

1. ADD new handheld unit to base:
 - Press PROG button on base shortly 3 times (3x ...)
 - LEDs will start to flash
 - during LEDs flashing on base unit, select »LOGIN IN BASE« on handheld unit
 - See LCD for report
 - LOGGIN SUCESS – LEDs on base will stop flashing
2. DELETE MEMORY (all handhelds and setup):
 - Press PROG button on base shortly 3 times (3x ...)
 - LEDs will start to flash
 - Hold PROG for 5 seconds
 - LEDs will go ON for 2 seconds. Memory is erased.
3. EXIT:
 - Press PROG button shortly to cancel function or
 - Wait 5 minutes for auto exit. Memory will remain unchanged.


BR1, BR2, BR3 base**BR3_Base, BR1_Base**

Base unit communicates bi-directionally with wireless hand held. Relays on the base are controlled by buttons on the hand held remote. Relays provide (+) signal to operate standard windlass contactor. Sensor is counting windlass revolutions while base calculates chain-rode deployed and transmits the result to handheld unit.

LED-SENS, red: Magnet over sensor indication.

LED-VF, yellow: Lights when handheld is operating. Flashing when error occurs on RF module.

LED-PWR, green: Lights when operating and slowly flashes when base is in sleep mode.

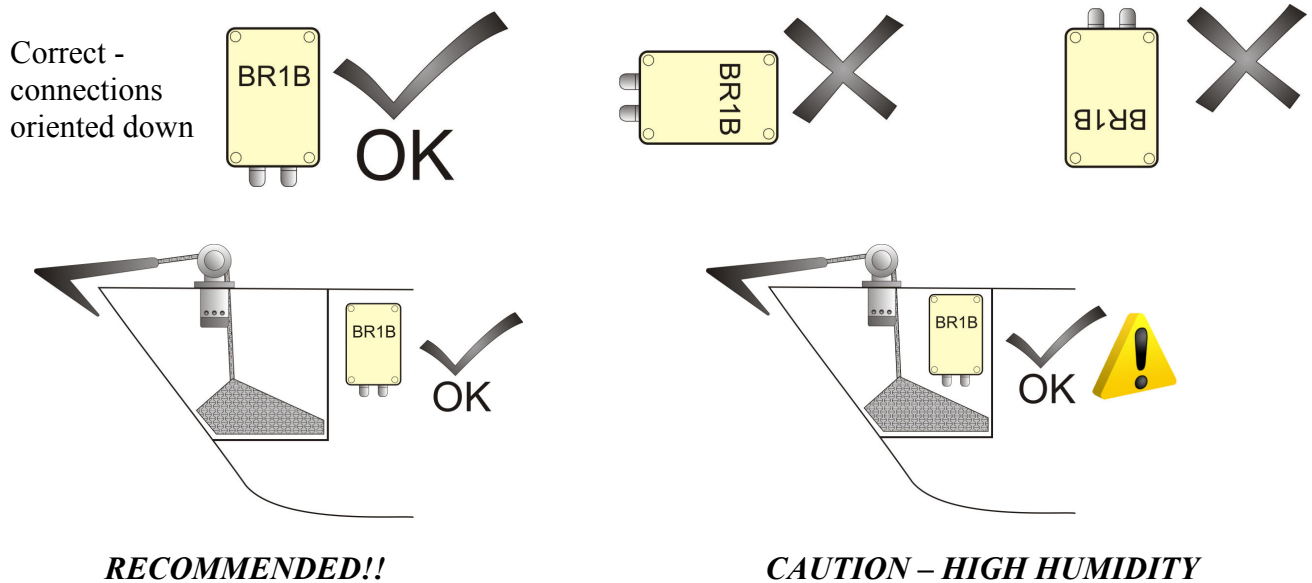
PROG button, : For adding new remotes to base and for deleting memory. See Base Setup.

IMPORTANT:

ANTENNA is 165mm long wire and should never be shortened, cut, extended or otherwise modified. Antenna is directly influencing range, communication quality and safety of the system. Never tighten the antenna with plastic tie to other cables or in parallel with metal.

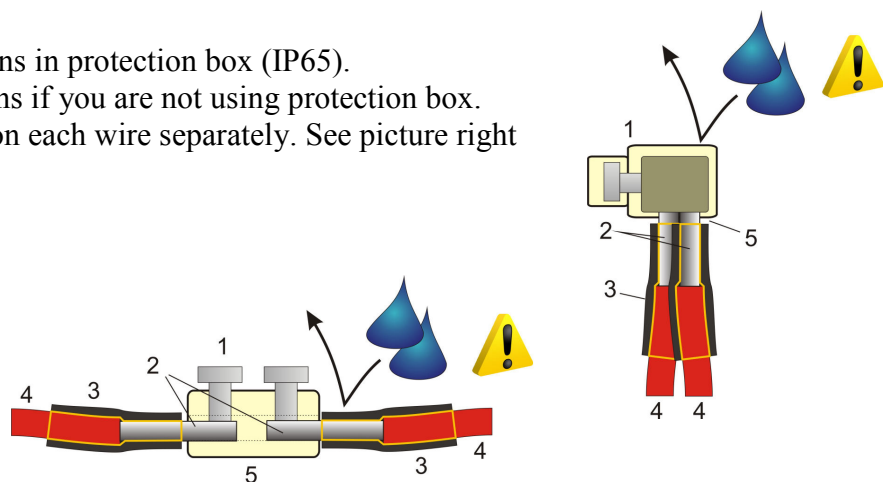
Base enters SLEEP MODE (green LED flashing) to reduce power consumption after the windlass is not in use for 10 minutes and it is waking up when windlass is operated manually or by remote control.

INSTALLATION



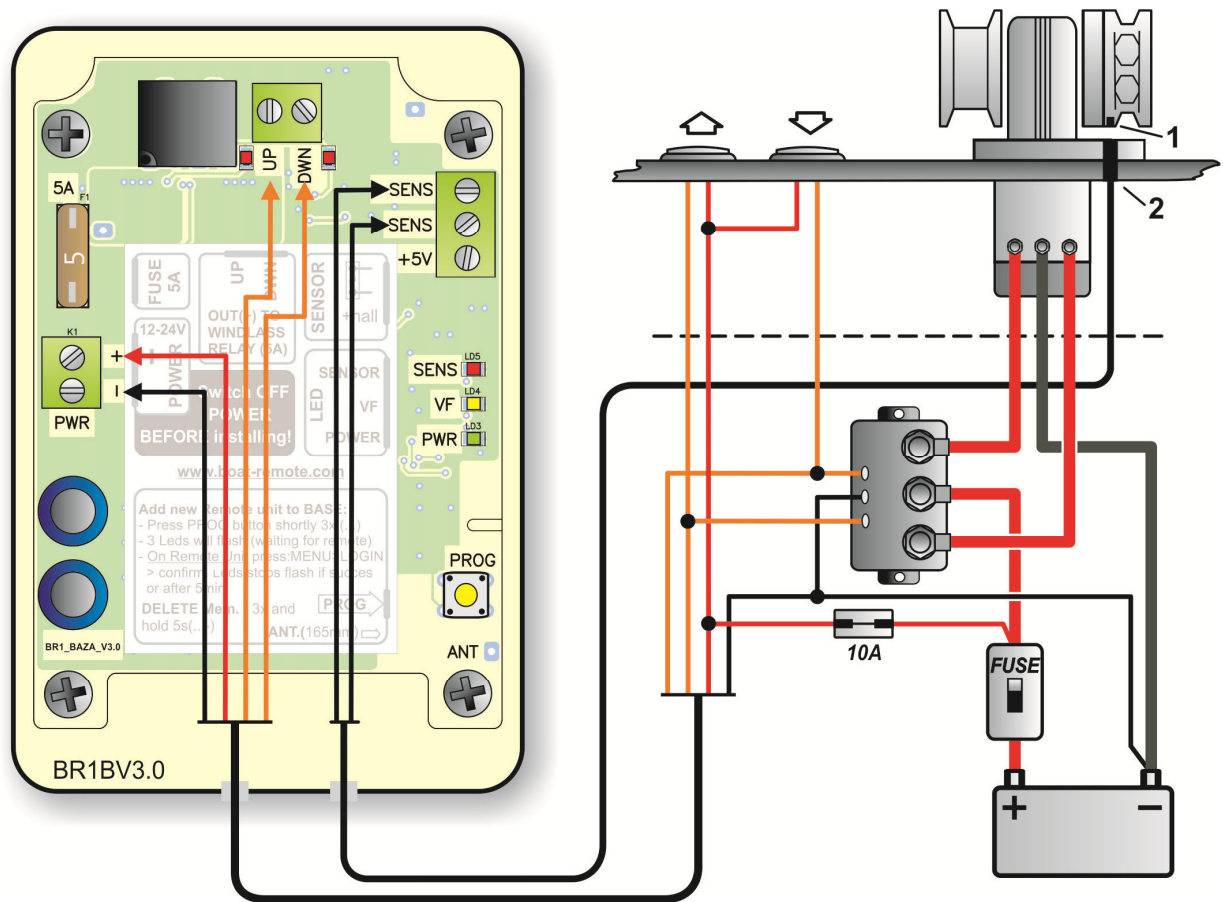
ALWAYS make connections in protection box (IP65).
 Make watertight connections if you are not using protection box.
 Use shrink tube with glue on each wire separately. See picture right and below.

- 1 - Terminal
- 2 - Soldered
- 3 - Shrink tube with glue
- 4 - Wire
- 5 - Greased



IMPORTANT:

- When you install BR1_Base in chain locker you need to prevent corrosion of connections. The best way is to use additional IP 65 box.
- BR2_Base or BR3_Base should never and under no circumstances be installed in chain locker unless it is installed in additional water protected enclosure IP65. It is also recommended for BR1_base especially if it is often exposed to running water.

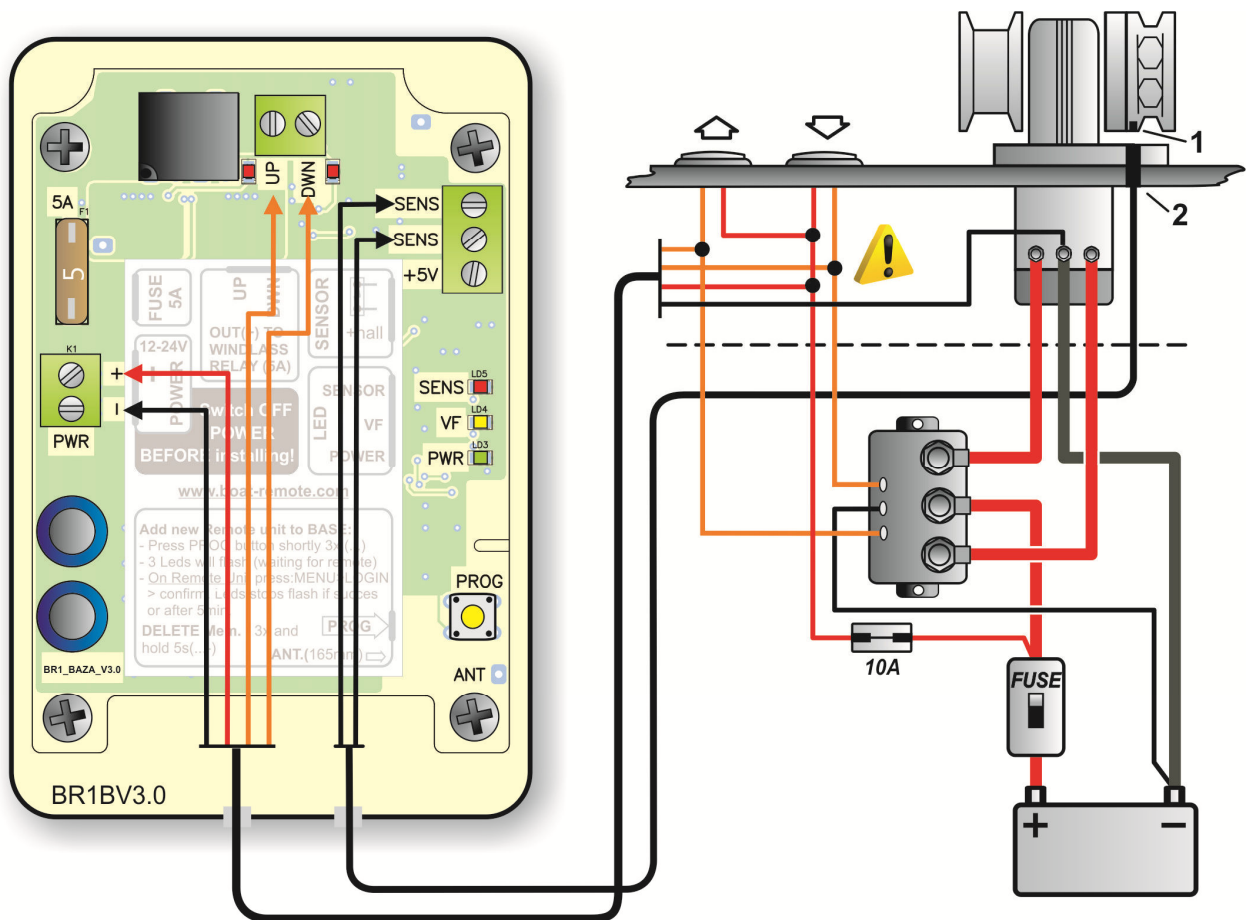
BR1_Base (installed in front cabin)

1. Magnet, 2. Sensor

It is recommended to install BR1_Base unit inside vessel in dry place.
Make connections at windlass contactor where you will find all necessary wires.

IMPORTANT

- Before installation disconnect power!
- Verify with instrument that the windlass power is really disconnected.
- BR1_Base enclosure must be oriented vertically with connections oriented down.
- For metal and carbon vessels check range before fixing BR1_Base.

BR1_Base (installed in chain locker)


1.Magnet, 2.Sensor

This is the most simple and quick way is to install BR1_Base on vessel, but you need to make high quality connections for trouble free and safe operation.

Connect **ground wire** (black) directly to windlass motor only as the last solution if you have no other dedicated ground connection available in the chain locker. Most of the problems occur because of poor connections on windlass ground wires or because they are undersized.

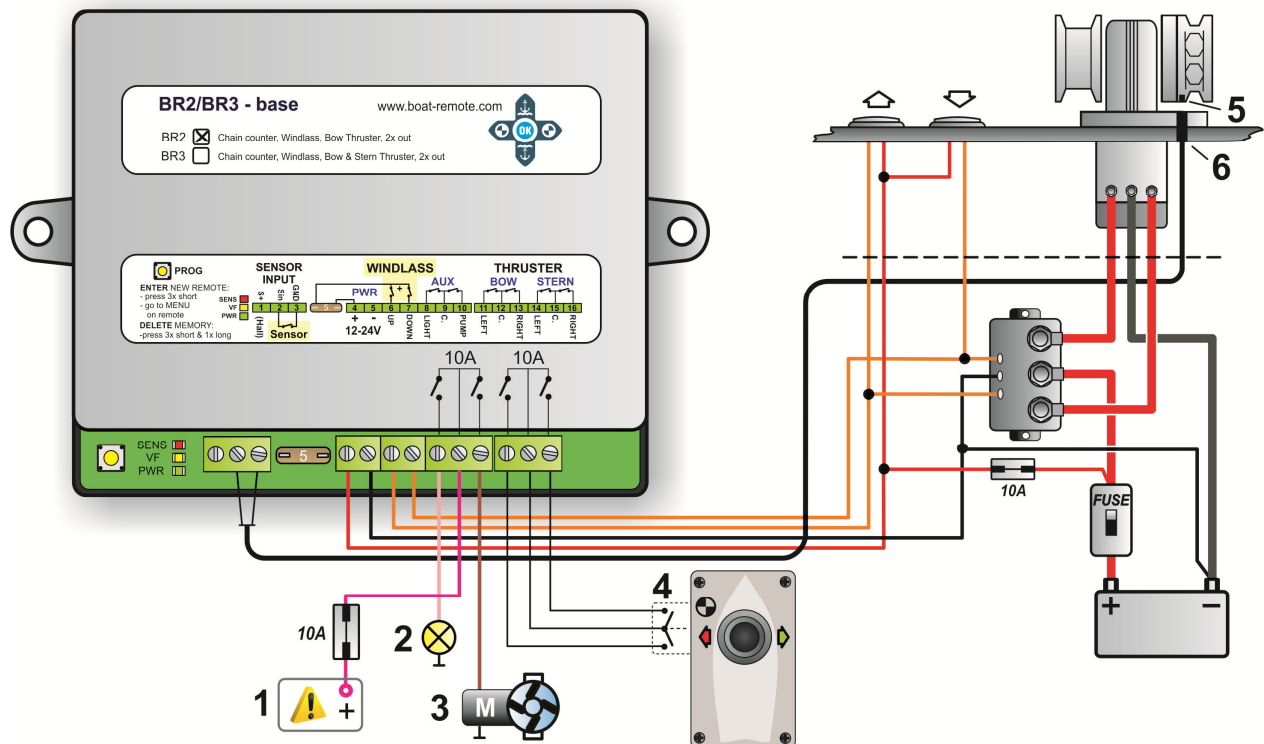
Complete all three connections marked with exclamation mark on scheme in separate IP65 box and use connection method which will prevent water to penetrate and corrode wires and contacts.

IMPORTANT

- Only two cables may enter BR1_Base! (Cable for power & control and cable for sensor)
- Before installation disconnect power!
- Verify with instrument that the windlass power is really disconnected.
- BR1_Base enclosure must be oriented vertically with connections oriented down.
- For metal and carbon vessels check range before fixing BR1_Base.
- Do not use water pressure cleaning on or near base unit!

BR1_Base enclosure is made to IP65 standard (running water and dust resistant). Before fixing the cover check that gasket is in place. With time gasket loses elasticity and water protection becomes lower. It is recommended to prime gasket with vaseline before closing cover. Tighten cover screws gently.

BR2_Base (installed in front cabin or at main helm)



1. AUX Power supply 12-24V. If light or pump is already installed you MUST supply them with the same power source as originally provided!
2. Light (recommended 50W, max 100W)
3. Deck water pump for chain and anchor cleaning
4. Bow thruster connection parallel to existing joystick.
5. Magnet
6. Sensor

It is necessary to install BR2_Base unit inside vessel in dry place.

Make connections at windlass contactor where you will find all necessary wires.

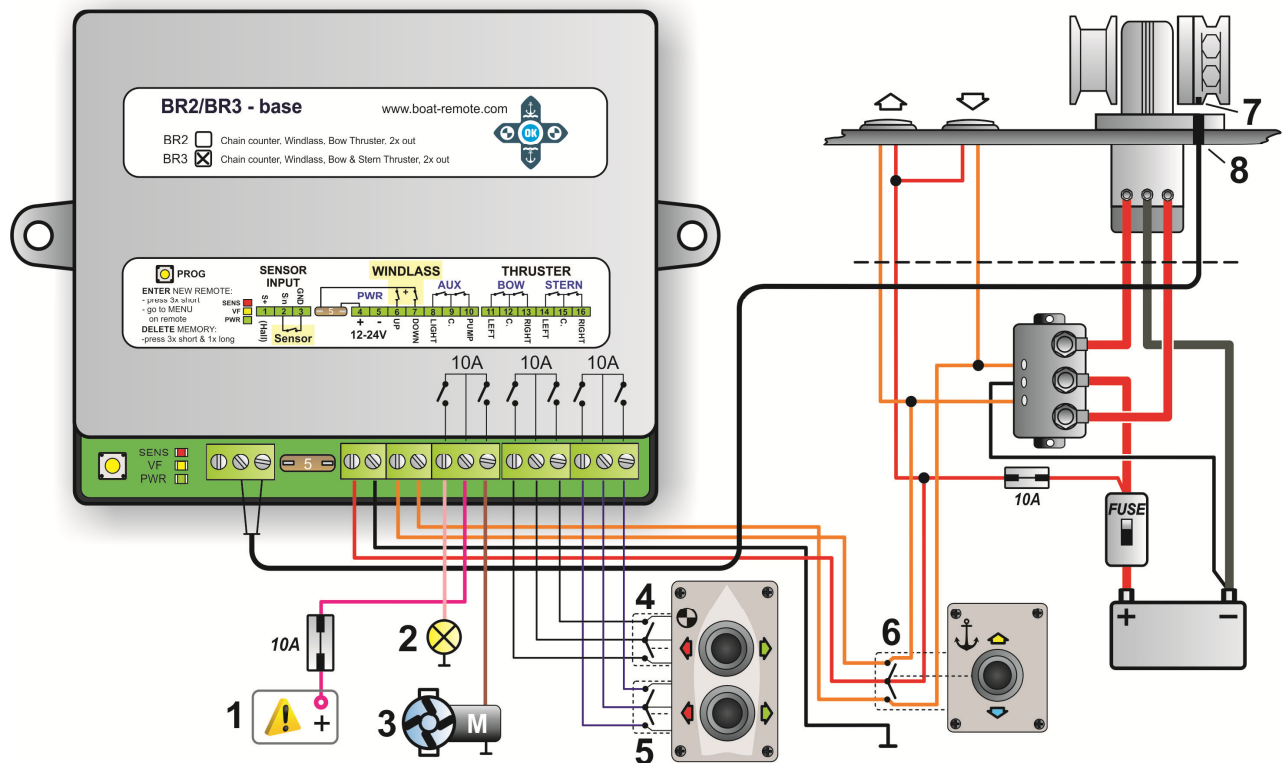
If you have all signals available at main helm you can install BR2_Base there and use BRS sensor for simple and quick installation. Read more about BRS sensor (“wireless”) for additional information and BR2/BR3 Jumpers settings in next chapter!

Connect bow thruster output parallel to joystick. Check bow thruster manuals for details.

IMPORTANT

- Before installation disconnect power!
- Verify with instrument that the windlass power is really disconnected.
- Install BR2_Base in dry place.
- For metal and carbon vessels check range before fixing BR2_Base.
- BR2_Base should never and under no circumstances be installed in chain locker unless it is installed in additional water protected enclosure IP65.

BR3_Base (installed at main helm)



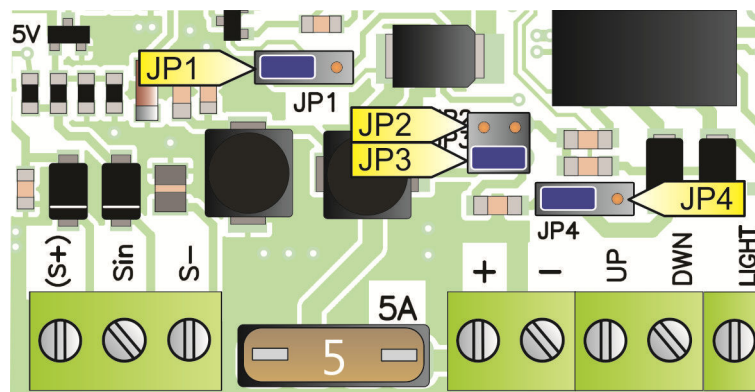
1. AUX Power supply 12-24V. If light or pump is already installed you **MUST** supply them with same power source as originally provided!
2. Light (recommended 50W, max 100W)
3. Deck water pump for chain and anchor cleaning
4. Bow thruster, connect parallel to existing joystick
5. Stern thruster, connect parallel to existing joystick
6. Windlass control; connect parallel to existing joystick. Connect ground on negative bus of same battery bank as used for windlass.
7. Magnet
8. Sensor

BR3 was designed for fast and simplest possible installation on any vessel. Connections are made to existing signals provided in more than 90% of vessels at main helm. The only wire which has to be installed extra if you install BR3 near main helm is windlass sensor wire. Sometimes installation of extra wire from chain locker is almost impossible especially if cables are sealed with sealing compound in glands between chain locker and forward cabin. Read more about BRS sensor ("wireless") for easy and quick installation solution and for additional information.

IMPORTANT

- Before installation disconnect power!
- Verify with instrument that the windlass power is really disconnected.
- Install BR2_Base in dry place.
- For metal and carbon vessels check range before fixing BR2_Base.
- BR3_Base should never and under no circumstances be installed in chain locker unless it is installed in additional water protected enclosure IP65.

BR2_Base, BR3_Base jumper settings



JP1 – voltage measurement select

JP2 –communication with BRS by control wires (on BRS JP1 set to LEFT)

JP3 –communication with BRS by power line (on BRS JP1 set to RIGHT)

JP4 – UP/DWN output positive/negative control

JP1. Voltage measurement select.

LEFT– measuring from PWR+ (Default setting)

RIGHT – measuring from common line (+) for light and water pump PIN 9.

On handheld unit windlass accu battery voltage is measured.

12.5V

During production this jumper is already installed on copper trace. If you want to select voltage sense from common line for water pump and light, cut existing trace and install jumper.

JP2/JP3. Windlass “wireless” sensor (BRS) communication line select.

JP2/ON, JP3/OFF - communication by windlass control lines

JP2/OFF, JP3/ON - communication by power line (Default setting)

For details please read BRS sensor chapter below.

JP4. UP/DOWN output positive/negative control select

LEFT – positive output (Default setting)

RIGHT – negative output

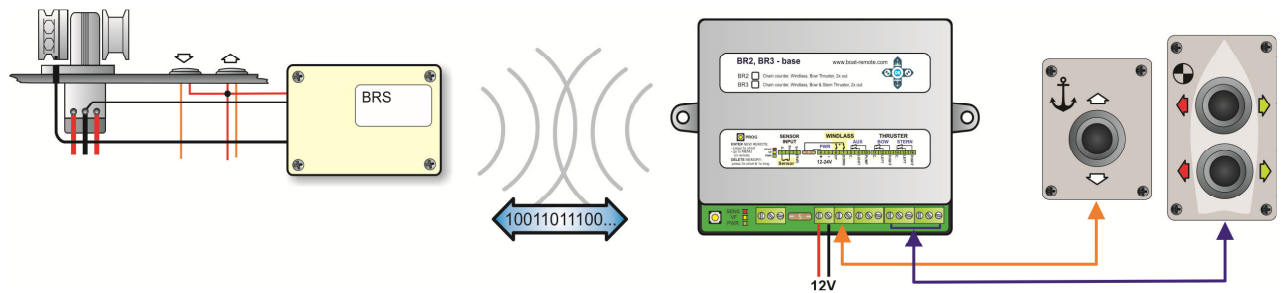
With JP4 you can select positive or negative control signal for your windlass contactor.

JP4 not installed, because of safety reason. Negative windlass contactor control should be connected only by experienced electrician.

IMPORTANT

Negative output selection should be used only if there is no other way to control windlass contactor with positive signal. Be aware that in this case BR_Handheld will not count chain if operated from elsewhere than remote control.

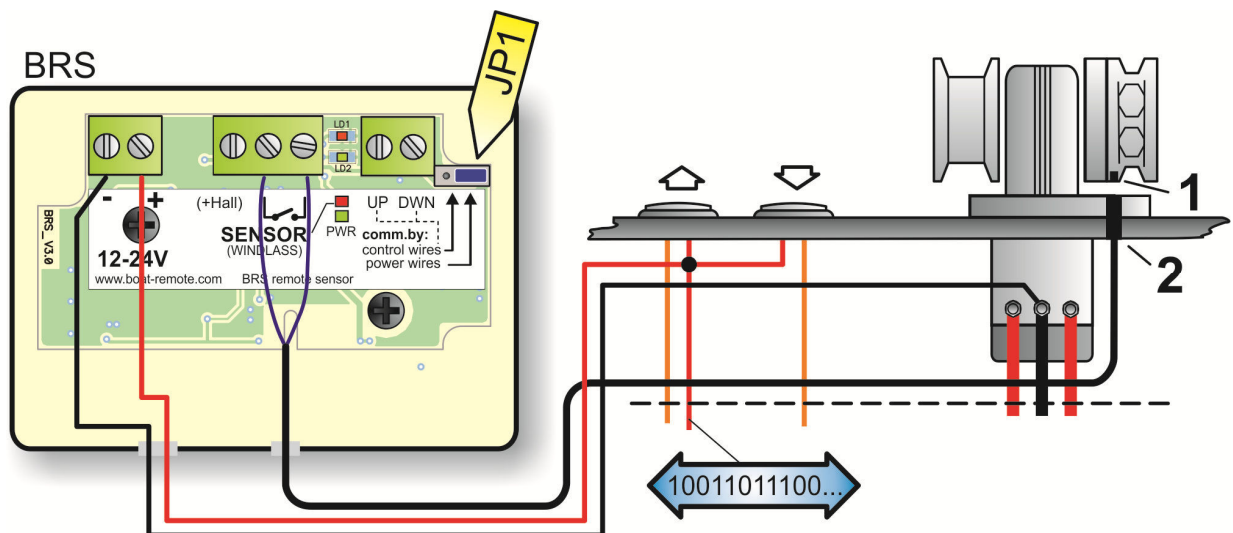
BRS – sensor (installed in chain locker)



BRS sensor was developed for **quick and easy installation for boats where laying sensor wire from windlass to Base is very difficult or not possible at all**. Signal from windlass magnet - reed sensor (or Hall sensor) is sent through power (or control) wire to BR2 or BR3 base. When windlass is not operating BRS enters sleep mode to minimize current consumption to less than 1mA. BRS can remain constantly powered.

Communication by DC power line:

This is the simplest and quickest way to connect windlass sensor to BR2_Base or BR3_Base. For communication by power line JP1 jumper has to be set (RIGHT).



1. Magnet,
 2. Sensor,
- JP1. (Right) communication by power line (red wire) selected. (Default setting)

Make quality connections as described in Installation chapter on page 9.

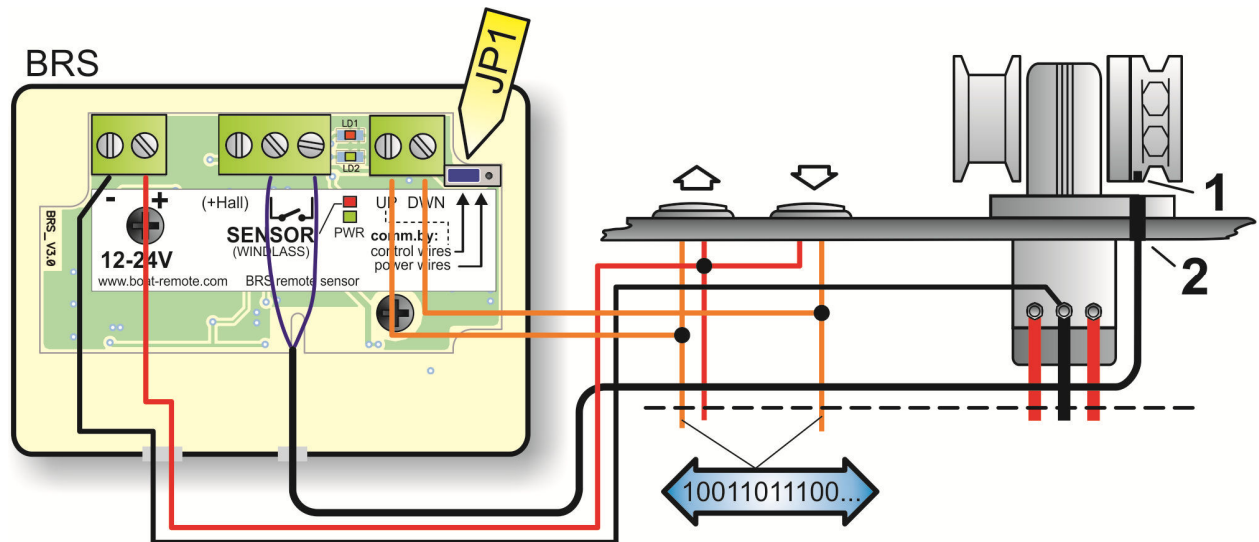
During installation test quality of communication before you finish installation. In some cases communication will not work so you will need to use communication by control wires as described in next chapter.

IMPORTANT

- Only two cables may enter BRS! (cable for power and cable for sensor).
- Before installation disconnect power!
- Verify with instrument that the windlass power is really disconnected.
- BRS enclosure must be oriented vertically with connections oriented down.
- Do not use water pressure cleaning on or near BRS!

Communication by control lines:

If power source for controlling windlass contactor is different than one used for windlass motor or if signal is not good enough because of under sized windlass wires, then you will need to connect also command wires for UP and DOWN to increase communication signal towards BR2_Base or BR3_Base.



1. Magnet,
 2. Sensor,
- JP1. (Left) communication by control (orange) wires selected

Connection of UP & DOWN in BRS serves only as direct communication line between BRS and BR2_Base or BR3_Base for better signal or when windlass contactor is supplied from different source or battery bank than windlass.

Make quality connections as described in Installation chapter above.

IMPORTANT

- Only two cables may enter BRS! (Cable for power & control and cable for sensor)
- Before installation disconnect power!
- Verify with instrument that the windlass power is really disconnected.
- BRS enclosure must be oriented vertically with connections oriented down.
- Do not use water pressure cleaning on or near BRS!

Windlass sensor installation

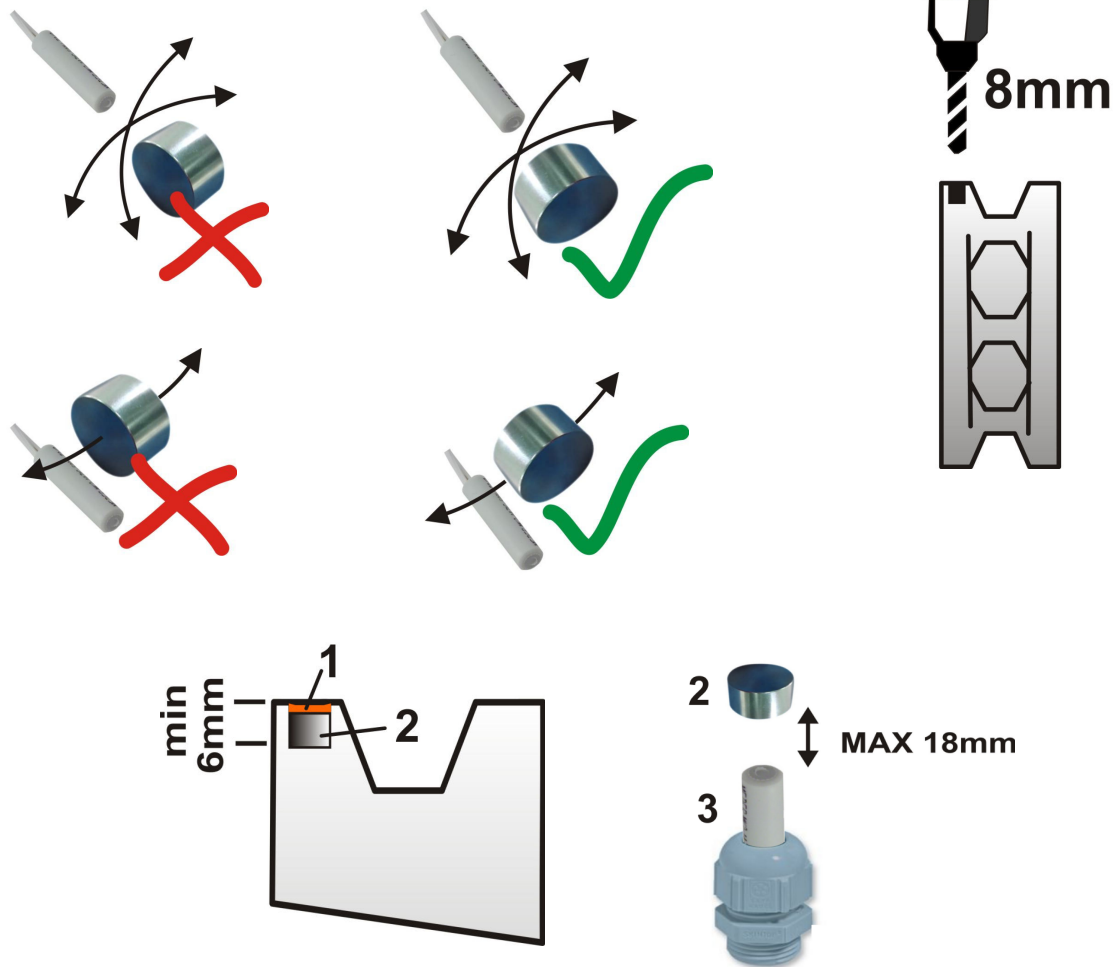
If your windlass is not yet equipped with the sensor then use universal sensor included.

Magnet

- Drill 8mm (diameter) hole, 7mm deep into windlass gypsy. It is normally made of brass and is easy to drill. Mark position with smaller drill first.
- Insert magnet and cover it with epoxy. If you do not cover (protect) the magnet with enough epoxy it will rust and decay in short time.

N/S pole orientation is not influencing sensing distance.

Orientation of sensor respective to magnet and rotation:



1. Epoxy glue (min 1mm), 2. Magnet, 3. Sensor

Sensor

For sensor installation universal holder is not available. You need to use your own technical skills to fix the sensor within magnet field range. Orientation of the sensor must correspond to above instructions. For installation you can use standard nylon 7mm cable gland. Fix nylon gland, insert sensor, trim distance and tighten the cap to fix the sensor.

Maintenance

For better sealing of battery compartment we recommend to use Vaseline, especially after several years of use, when seal loses elasticity.

Instructions in the event of submersion in the water:

- Instantly Turn off the device and remove the battery.
- Check that no water came inside the box.
- If necessary, dry and clean with alcohol to clean the circuit and contacts that came into contact with sea water.
- Assemble the device, insert the battery and attach the battery cover.
- To improve water resistance it is recommended to lubricate seals with Vaseline.

Technical data

Wireless handheld remote:

BR_Handheld (7 buttons), BR3_Handheld (9 buttons)

Display: LCD transfective, direct sunlight viewable

Resolution: 98 x 64 pixels

Back light: yes (smart)

Keypad: foil with perforated buttons, watertight, illuminated

Power: battery AAA x 3pcs (for two years of average use)

Power consumption: 41mA with back light, Standby: 33mA, (OFF-9uA)

Protection: IP65. Handheld remote unit is moisture resistant, allows operation with wet hands, in rain, survives water splash (not under pressure). Unit is made to be water resistant, but we do not guarantee to be watertight when submerged in the water. Please carefully follow battery replacement instructions for maximal water resistance.

Dimensions: 120mm x 70mm x 30mm (length, width, height)

Weight: 165g

Base: type, BR1_Base

Power supply: 12-24V, min 9V

Power consumption: With relay on: 87mA, Standby: 40mA, Sleep: 13mA

Outputs: 2 (UP, DOWN)

Output type: relay 20A, current limited with fuse 5A

Sensor input: reed switch or hall sensor

Dimensions: 120mm (140mm with glands) x 80mm x 42mm length, width, height)

Weight: 175g

Base: type, BR2_Base, BR3_Base

Power supply: 12-24V, min 9V

Power consumption: With relay on: 87mA, Standby: 40mA, Sleep: 13mA

Output: BR2B-6 outputs, BR3B-8 outputs

Output type: NO relay 20A, (UP and DOWN output protected with fuse 5A!)

Sensor input: reed switch or hall sensor

Dimensions: 120mm (140mm with glands) x 80mm x 42mm length, width, height)

Weight: 175g

Communication: bidirectional

Range: Wood or plastic hull: min 20m, Metal hull: min10m

Number of channels: 13 channels (ch2-ch13 available for custom selection)

Frequency: 434.040-434.790MHz

RF power (e.r.p.): 10mW
Bandwidth: 25 kHz
Standard: ETSI EN 300 220-3
Communication speed: 8kbps
FEC: 8 bit
Coding: 32 bit (Unique ID code; 4,294,967,295 available)

Warranty

HARPOON ELEKTRONIKA provides one year limited warranty from date of purchase for all HARPOON products worldwide.

This warranty is subject to the following conditions and limitations:

HARPOON ELEKTRONIKA shall not be liable for any loss, damages, harm or claim attributed to:

- Use of the products in applications for which the products are not intended.
- Corrosion, wear and tear or improper installation.
- Improper use of the product.

This warranty will be null and void if:

- There is any neglect or failure to properly maintain the products.
- The products are serviced, repaired or maintained improperly or by unauthorized persons.
- Loss or damage is attributed to any act, matter or omission beyond the reasonable control of HARPOON ELEKTRONIKA or the purchaser.

HARPOON ELEKTRONIKA's liability shall be limited to repair or replacement (as determined by HARPOON ELEKTRONIKA) of the goods or parts defective in materials or workmanship.

Determination of the suitability of the product and the materials for the use contemplated by the buyer is the sole responsibility of the buyer, and HARPOON ELEKTRONIKA shall have no responsibility in connection with such suitability.

HARPOON ELEKTRONIKA shall not be responsible for shipping charges or installation labor associated with any warranty claims.

There are no warranties of merchantability, fitness for purpose, or any other kind, express or implied, and none shall be implied by law. If any such warranties are nonetheless implied by law for the benefit of the customer they shall be limited to a period of one year from the original purchase by the user.

HARPOON ELEKTRONIKA shall not be liable for consequential damages to any vessel, equipment, or other property or persons due to use or installation of HARPOON ELEKTRONIKA equipment.

This warranty sets out your specific legal rights allowed by HARPOON ELEKTRONIKA; these may be varied by the laws of different countries. In addition, the Purchaser may also have other legal rights which vary from country to country.

To make a claim under this warranty, contact HARPOON ELEKTRONIKA office or distributor. Proof of purchase and authorization from HARPOON ELEKTRONIKA will be required prior to any repairs being attempted.

Please address your warranty claims to:

HARPOON elektronika Ltd
Hrastovec 12
1236 Trzin industrial zone
Slovenia, EU
Or contact us via e-mail:
Info@harpoon.si